

## CLAIMS

- Substantive*
1. In a wireless communication system, an apparatus for scheduling forward link transmissions, comprising:
- a memory element; and
  - a processing element configured to execute a set of instructions stored on the memory element, the set of instructions for:
    - receiving a full channel quality value and a plurality of incremental channel quality values from a remote station, wherein the plurality of incremental channel quality values are received sequentially; and
    - selectively updating a register with a channel quality estimate, wherein the channel quality estimate is based upon the full channel quality value and the plurality of incremental channel quality values.
2. The apparatus of Claim 1, wherein selectively updating the register with the channel quality estimate comprises:
- sequentially adding the plurality of incremental channel quality values to the contents of the register; and
  - resetting the register with the full channel quality value when the full channel value is received.
3. The apparatus of Claim 1, wherein the full channel value is received concurrently with more than one incremental channel quality value.
4. The apparatus of Claim 3, wherein selectively updating the register with the channel quality estimate comprises:
- sequentially adding the plurality of incremental channel quality values to the contents of the register;
  - resetting the register with the full channel quality value when the full channel value is received;
  - summing a portion of the plurality of incremental channel quality values; and

adding the summed portion of the plurality of incremental channel quality values to the full channel quality value set in the register.

5. A method for estimating forward link channel quality from a full channel quality value and a plurality of incremental channel quality values, comprising:

decoding the full channel quality value over a plurality of slots;

incrementally updating a channel state register with the plurality of incremental channel quality values, wherein each of the plurality of incremental channel quality values are received separately over each of the plurality of slots; and

resetting the channel state register with the full channel quality value when the full channel quality value is fully decoded.

6. The method of Claim 5, further comprising:

summing a portion of the plurality of incremental channel quality values;

and

adding the summed portion of the plurality of incremental channel quality values to the full channel quality value stored in the channel state register.

7. The method of Claim 5, further comprising:

summing the plurality of incremental channel quality values; and

adding the summed plurality of incremental channel quality values to the full channel quality value stored in the channel state register.

8. The method of Claim 5, wherein if the full channel quality value cannot be decoded, then using the plurality of incremental channel quality values as the forward link channel quality.

9. An apparatus for transmitting channel quality values over a feedback channel to a base station, comprising:

a re-synch subchannel generation system for generating full channel quality values; and

a differential feedback subchannel generation system for generating a plurality of incremental values, wherein the plurality of incremental values are multiplexed with the full channel quality values.

10. The apparatus of Claim 9, wherein the plurality of incremental values are code-multiplexed with the full channel quality values.

11. The apparatus of Claim 9, wherein the plurality of incremental values are time-multiplexed with the full channel quality values.

12. The apparatus of Claim 9, further comprising a transition indicator subchannel generation system for generating a flag that indicates the start of a transitional period.

13. The apparatus of Claim 12, wherein a Walsh spreading element is used in the re-synch subchannel generation system and not used in the differential feedback subchannel.

14. The apparatus of Claim 12, wherein a common Walsh function is used in the differential feedback subchannel generation system and the transition indicator subchannel generation system.

15. The apparatus of Claim 14, wherein the common Walsh function is used to indicate a base station index.

16. A method for transmitting channel information from a remote station to a base station, comprising:

generating a full channel quality value; and

generating an incremental channel quality value, wherein the incremental channel quality value is multiplexed with the full channel quality value.

17. The method of Claim 16, wherein the full channel quality value is generated over more than one slot.

*Subj A2*

20070101000000000000

18. The method of Claim 16, wherein the incremental channel quality value is generated over each slot in a channel frame.

19. The method of Claim 18, further comprising:

generating a transition indicator, wherein the transition indicator is multiplexed with the incremental channel quality value and the full channel quality value and is used to indicate a transition period for the base station.

~~20. Apparatus for estimating forward link channel quality from a full channel quality value and a plurality of incremental channel quality values, comprising:~~

~~means for decoding the full channel quality value over a plurality of slots; and~~

~~means for incrementally updating a channel state register with the plurality of incremental channel quality values, wherein each of the plurality of incremental channel quality values are received separately over each of the plurality of slots and for resetting the channel state register with the full channel quality value when the full channel quality value is fully decoded.~~

~~21. Apparatus for transmitting channel information from a remote station to a base station, comprising:~~

~~means for generating a full channel quality value; and~~

~~means for generating an incremental channel quality value, wherein the incremental channel quality value is multiplexed with the full channel quality value.~~

22. The apparatus of Claim 21, further comprising:

means for generating a transition indicator, wherein the transition indicator is multiplexed with the incremental channel quality value and the full channel quality value and is used to indicate a transition period for the base station.

*Add all* >